

Remarks/Arguments**In the Claims**

Claims 1-20 were pending prior to this response. By the present communication, claims 1, 8, and 20 were cancelled in favor of new claims 21-23, which are believed to more particularly describe the elements of the present invention. Support for the new claims 21-23 is found throughout the specification and original claims. Support for certain language used in the claims is found at least at the following places in the specification:

Support for the phrase "computing system" is supported by the legend to Figure 1 and Figure 1 itself;

Support for the phrase "performance-ready" is on page 3, line 28 (2nd line from bottom of page);

Support for a means for, and the step of, digitizing a musical composition is found throughout the specification, including page 9 (see microphone 110) and the original claims;

Support for the term "processor" is in original claim 20;

Support for the terms "strokes" and "stroke groups" and use of same in calculating fingering is found throughout the specification, including Figures 3A,B, and C, their legends, and pages 10-16;

Support for recitation that the fingering information can be published, stored or used is found in the original claims and on page 9 (see data storage device 114).

Claims 2-7 and 9-19 were amended to depend from new claim 21 and to improve grammatical consistency. No new matter was added by any

amendment. Accordingly, claims 2-7, 9-19, and 21-23 are currently pending in the application.

Information Disclosure Statement

The Examiner stated that the information disclosure statement filed 1/27/2004 fails to comply with 37 CFR1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The Examiner further stated that "it" has been placed in the application file, but the information referred to therein has not been considered. Applicants presume "it" is the Information Disclosure Statement.

Applicants note that the Examiner attached the Information Disclosure Statement to the Official Action. The Examiner's initials are placed next to each of the U.S. patents cited by Applicants and the copyright reference on page 2 is crossed off. Applicants understand this to mean that the Examiner did consider each of the U.S. patents cited on the Information Disclosure Statement, but did not consider the copyright document also cited. Confirmation of this understanding is requested.

Applicants are unsure of the action required. If the Examiner requires a copy of the copyright document, which was filed with the Library of Congress on February 4, 2002, less than one year before the filing date of the provisional application (February 2, 2003) upon which the present application bases its priority date, then Applicant will promptly provide a copy of the document. Clarification is requested.

The Rejection under 35 U.S.C. §102(b)

Claims 1, 3, 5, 6, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by the U.S. patent to Rogers (US 6,080,925; "Rogers"). The Examiner stated that Rogers teaches a method for determining the correct and appropriate fingering for a given musical instrument comprising a memory or storage device, an inputting means, an output means, and a means for calculating the optimum and alternate fingering of different musical data for an interested party. Rogers is also said to teach displaying the fingering information in tablature form, and teaches alternate fingering for easier use and for a preferred tonal style.

Claims 1 and 20 are cancelled by the present Amendment in favor of new claims 21 and 22. The rejection is addressed by first discussing the present invention in comparison to the Rogers device, and then more specifically with respect to how claims 21 and 22, and claims 2, 5, and 6 that depend from claim 21, are distinguished from Rogers.

The present invention is a method and a machine that, without any user input other than selection of a musical composition, converts the inputted musical composition into complete performance-ready fingering information that allows a user to perform, publish, or store the entire musical composition. One feature that distinguishes the present invention from Rogers and other prior art fingering devices, is that the determination of fingering information is based on *all possible strokes for the entire musical composition*. The musical composition is input and, if necessary, digitized, and the entire digital musical data are used to calculate fingering for the composition. This feature results in fingering that is optimized for the entire performance, i.e., the selection of one fingering position was made "intelligently", such that it would be the optimal fingering based on subsequent fingering. The end result, or output, is complete performance-ready fingering information that is specific for that composition.

By way of nonlimiting example, sheet music for a complete musical composition can be scanned into the presently invented machine where the computing system digitizes it into digital musical data, which is stored in the memory. In one embodiment, the processor first identifies all strokes in the complete composition and assembles those strokes into groups. Based on all the stroke groups, the processor determines which of these groups are to be used to determine optimum or alternate fingering. This determination is based on factors such as hand movement, i.e., selecting groups that allow the performer to transition from one stroke to the next with ease, or learning stage of the performer, i.e., selecting groups that result in fingering that is more or less complex for a more or less advanced performer, respectively. Because the processor determines the performance ready fingering information automatically, without any input from the user, the user can be a novice or an expert and need have no musical training or understanding.

The Rogers patent cited by the Examiner describes an electronic device for calculating and illustrating on an active tablature display, guitar or keyboard scales and chords. The device comprises manually operable dials that are associated with a microcontroller. According to Rogers, a user manually turns the dials and switches to correspond to certain chord, key and scale information known to the user. Based on this user input, the microcontroller causes the active tablature to display chord shapes and scale patterns to be played by the user in real time, i.e., the performer plays the chord at the time it is displayed.

The fingering device set forth in the Rogers patent differs from the present invention in several significant features. First, the Rogers device requires the user to input (via the Auto Scale Mode, Auto Scale Type ? Mode, Manual Scale Mode, or Chord Mode) information about the chord in question and the key in which the musical piece is to be played. In stark contrast, the device of the present invention requires no user information other than selection of the musical

composition to be input into the computing system. Accordingly, no knowledge of music is needed in order to use the present invention. This feature of the invention is highlighted in part (e) of claim 21 and part (c) of claim 22, wherein *the processor* (not the user) identifies all strokes and stroke groups corresponding to the musical composition and then, based on all the strokes and groups, calculates the fingering information for the entire composition.

Second, the output from the Rogers device is fingering information displayed (i) in a piecemeal fashion, e.g., chord by chord, or in small segments, and (ii) only on the device itself. The output from the present invention is different, as highlighted in part (f) of claim 21 and part (d) of claim 22, where the output (i) is "performance-ready", i.e., fingering for the complete musical composition is output at one time, not as each note is played, and (ii) can be output in a variety of ways. Moreover, because the Rogers device does not evaluate the entire musical composition, and determine its fingering information there from, the fingering information provided by Rogers cannot be complete and performance-ready.

Third, the Rogers device appears to be useable only in real time, i.e., it displays the fingering information on an active tablature board and does not store the fingering information for display at a later time. Significantly, the Rogers device does not even have a memory that could store the fingering information for use at a later time. This real time use is consistent with the stated purpose of the Rogers device, which is to enable a user to "spontaneously play a beautiful solo without having first planned or rehearsed that solo" (column 1, lines 11-12) and for "improvised solos" (column 7, line 19). The present invention, however, was designed to convert a musical composition into digital musical data, store that data, as well as use it to calculate fingering information for the entire composition and output complete performance ready fingering information that can be used at any time (see part (f) of claim 21 and claim 22).

For a rejection under 35 U.S.C. §102(b) to stand, the cited reference (Rogers) must disclose each and every element of the rejected claims. New claims 21 and 22 (which replace rejected claims 1 and 20, respectively) recite elements that more particularly describe the present invention and more clearly distinguish it from the Rogers disclosure. For convenience, the elements of parts (a) of claim 21 and parts (a) – (d) of claim 22 are displayed in Table 1, with a comparison to the Rogers disclosure and notation as to whether the element is present or absent from Rogers:

TABLE 1

Claim 21	Claim 22	Elements of Claims 21 and 22	Rogers Disclosure – present or absent?
(a)	Pre- amble	Computing system	Present (microprocessor)
(a)	(a)	Memory able to store digital musical data	Absent; only ROM (read only memory) disclosed in Rogers; ROM does not store data
(a)	(b)	Means of inputting and digitizing composition into digital musical data	Absent; no means of digitizing or digital musical data are disclosed
(a)	(c)	Processor for identifying all strokes and stroke groups and calculating fingering for the complete performance-ready composition	Absent; does not calculate fingering based on all strokes in entire composition; user has to manually turn dials/switches to tell microprocessor what to do on a piecemeal basis
(a)	(d)	Means of outputting complete performance ready fingering that can be used, stored, or published	Absent; output fingering information is piecemeal, not in a complete performance-ready format, and cannot be stored

Therefore, based on a thorough review of the Rogers patent, Applicants conclude that Rogers does not anticipate each and every element of claims 21 and 22, and claims 3, 5 and 6 that depend from claim 21, and therefore cannot anticipate the present invention. Applicants respectfully request that the rejection

of claims 3, 5, and 6 under 35 U.S.C. §102(b) be removed, and claims 2-7, 9-19, and 21-23 be found novel.

The Rejection under 35 U.S.C. §103(a)

Claims 2 and 4 are rejected under 35 U.S.C. §103(a), as being unpatentable over Rogers in view of the U.S. patent to Hesnan (U.S. 5,639,977).

Claims 7, 13, and 14 are rejected under 35 U.S.C. §103(a), as being unpatentable over Rogers in view of the U.S. patent application to Sitrick et al. (2003/0110925).

Claim 8 is rejected under 35 U.S.C. §103(a), as being unpatentable over Rogers in view of the U.S. patent to Michero (U.S. 6,331,668).

Claims 9-12, 15, 16 and 19 are rejected under 35 U.S.C. §103(a), as being unpatentable over Rogers in view of the U.S. patent to Fukada (U.S. 6,107,557).

Claims 17 and 18 are rejected under 35 U.S.C. §103(a), as being unpatentable over Rogers in view of the U.S. patent to Tice et al. (U.S. 6,751,439).

In each rejection, the Examiner alleges Rogers teaches all elements of the rejected claim(s) but one; the cited secondary reference is alleged to teach the missing element. The Examiner concludes that it would have been obvious for one of skill in the art, at the time of the invention, to incorporate the missing element from the cited secondary reference into the Rogers device and, thereby, reach the elements of the rejected claim(s). Applicants respectfully disagree.

For a rejection under 35 U.S.C. §103(a) to stand, the Examiner must show that a specific combination of references teaches each and every element of the

rejected claim and that one of skill in the art would have been motivated, at the time of the invention, to combine the references in such a manner to practice the method of the rejected claim. The present rejections do not meet either of these criteria, let alone both.

Combination must teach each and every element of rejected claim

Each of the claims rejected under 35 U.S.C. §103(a) depends from claim 1. Claim 1 was cancelled in favor of claim 21. As discussed in the arguments in response to the rejection under 35 U.S.C. §102(b), Rogers does not teach each and every element of claim 21. In brief, Rogers does not teach a computing system with a memory able to store digital musical data, a means of inputting and digitizing a musical composition into digital musical data, a processor for identifying all strokes and stroke groups in the digital musical data and calculating fingering for performing the musical composition, and a means of outputting the complete performance-ready fingering, and does not teach the steps for using such elements.

A review of the cited references reveals that none can supply all of the elements missing from Rogers (see Table 1, above, for missing elements), as well as the missing element for which it was cited. Accordingly, none of the combination of references cited in support of the rejections under 35 U.S.C. §103(a) addresses each and every element of the rejected claim and, therefore, none of the rejections can support a finding of obviousness. Applicants respectfully request that the rejections under 35 U.S.C. §103(a) be removed.

No motivation to combine references

Even if the Rogers reference was complete but for the single claim elements noted by the Examiner (which it is not, as outlined above), there is no

indication one of skill in this art would have been motivated to combine Rogers with any of the cited references in the manner suggested by the Examiner. Applicant could find no passage in Rogers or the secondary reference to evidence such motivation, and the numerous distinctions between the present invention and the Rogers device makes it clear that one could not just attach a monitor, for example, to the Rogers device and reach the present invention.

As outlined above, the Rogers device is directed to a different purpose than the present invention. As far as Applicants can tell, the Rogers device purports to provide a musician with fingering information he/she uses as he/she is playing a composition. The Rogers device is not designed to permit input of an entire musical composition and calculate fingering that is based on all strokes and stroke groups in that composition. These are two very different inventions. Accordingly, and contrary to the Examiner's assertions, it would not be a trivial matter to convert the Rogers device into the present invention merely by (1) attaching an input means into which an entire musical composition could be input (one cannot input an entire musical composition into Rogers using Rogers' manual dials and switches), (2) attaching a means to digitize the input information into digital musical information (not present in Rogers), (3) attaching a memory to store the digital musical information (not present in Rogers), (4) attaching a processor that is capable of identifying all strokes and stroke groups in the digital musical information and calculating fingering for the musical composition based on such stroke information (not present in Rogers), and (5) attaching an output means such that the fingering information could be used, stored, or published (Rogers output only allows real time reading).

Thus, for an obviousness rejection to stand, there must be some evidence, other than the Examiner's assertion that "it would have been obvious", that one of skill in the art would have been motivated to combine Rogers with the cited secondary references in an attempt to reach the present invention. Absent

such reasoning, Applicants respectfully request that the rejections under 35 U.S.C. §103(a) be dismissed.

Request for Refund

A Petition for Extension of Time and a check in the amount of \$510.00 were mailed on November 21, 2005 in accordance with a three month extension in which to reply to the present Official Action. As Applicants responded with the two month extension period, Applicants hereby request a refund of \$285.00, the difference between the fee for a two month extension of time and the fee for a three month extension of time (small entity). Please mail the refund to the undersigned co-inventor and co-assignee:

Richard Worrall
12289 Ragweed Street
San Diego, CA 92129

Conclusion

In view of the above amendments and remarks, allowance of claims 2-19, 21, and 22 is respectfully requested. A good faith effort has been made to place this application in condition for allowance. If the Examiner believes that a telephonic interview would hasten the prosecution of the present application, then she is invited to call the co-inventor/co-assignee Richard Worrall, at 858-484-7736, to schedule a teleconference. Applicants believe that no additional fees are due in connection with the present Amendment. However, if any fee is due, please deduct it from the refund owed (see above) or notify Applicants of the deficiency.

Respectfully submitted,

for Richard Worrall and Robert Sharp

